

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A process for preparing a monohydroperfluoroalkane, bis(perfluoroalkyl)phosphinate or perfluoroalkylphosphonate
Process for the preparation of monohydroperfluoroalkanes, bis(perfluoroalkyl)phosphinates
and perfluoroalkylphosphonates, comprising treating a at least the treatment of at least one
perfluoroalkylphosphorane with at least one base

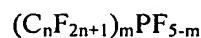
- a) an alkaline earth metal hydroxide,
- b) an organometallic compound, or
- c) an organic base,

and optionally treating with and, if desired, an acid in a suitable reaction medium.

2. (Cancelled)

3. (Currently Amended) A process Process for the preparation of
bis(perfluoroalkyl)phosphinates and perfluoroalkylphosphonates according to Claim 1,
characterised in that at least one wherein the perfluoroalkylphosphorane is reacted with an
alkaline earth metal hydroxide in a at least one inorganic base (b) in a suitable solvent, the
resultant bis(perfluoroalkyl)phosphinates and perfluoroalkylphosphonates formed in addition
to the monohydroperfluoroalkanes are converted into the corresponding bis(perfluoro-
alkyl)phosphinic acids and perfluoroalkylphosphonic acids directly or after isolation by salt
interchange or subsequent treatment with an acid, preferably sulfuric acid, and the salts are
obtained by subsequent neutralisation, preferably using organic bases (e).

4. (Currently Amended) A process Process according to Claim 1, wherein
characterised in that the perfluoroalkylphosphorane employed is a compound of the general
formula I



in which $1 \leq n \leq 8$, preferably $1 \leq n \leq 4$, and m in each case denotes 1, 2 or 3.

5. (Currently Amended) A process according to Claim 1, wherein characterised in that the perfluoroalkylphosphorane is selected from the group consisting of difluorotris(pentafluoroethyl)phosphorane, difluorotris(n-nonafluorobutyl)phosphorane, difluorotris(n-heptafluoropropyl)phosphorane or and trifluorobis(n-nonafluorobutyl)phosphorane.

6. (Cancelled)

7. (Currently Amended) A process according to Claim 1 6, wherein characterised in that the organic base(s) is (are) base is selected from the group consisting of alkylammonium hydroxides, arylammonium hydroxides, alkylarylammonium hydroxides, alkylphosphonium hydroxides, arylphosphonium hydroxides, alkylarylphosphonium hydroxides alkylamines, arylamines, alkylarylamines, alkylphosphines, arylphosphines and alkylarylphosphines.

8. (Cancelled).

9. (Cancelled)

10. (Cancelled)

11. (Currently Amended) A process according to Claim 1 9, wherein characterised in that the alkaline earth metal hydroxide is selected from the group consisting of barium hydroxide, barium hydroxide octahydrate or and calcium hydroxide.

12. (Currently Amended) A process according to Claim 1 2, wherein characterised in that the organometallic compound is compounds are selected from the group consisting of metal alkoxides, preferably alkali metal alkoxides, metal aryloxides, metal alkylthiooxides, metal arylthiooxides, alkylmetal compounds, arylmetal compounds and Grignard reagents.

13. (Currently Amended) A process according to Claim 1, wherein

~~characterised in that~~ the reaction medium is water, ~~if desired~~ optionally mixed with one or more organic solvents.

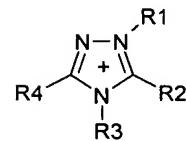
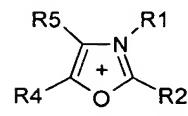
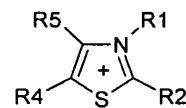
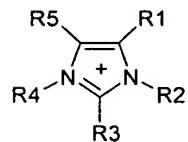
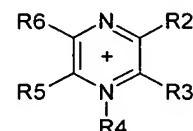
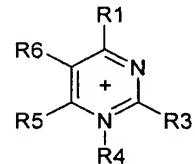
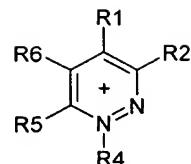
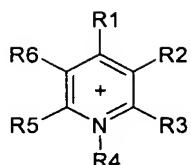
14. (Currently Amended) A process ~~Process~~ according to Claim 1, wherein ~~characterised in that~~ the reaction medium ~~employed~~ is one or more organic solvents.

15. (Currently Amended) A process ~~Process~~ according to Claim 13, wherein ~~characterised in that~~ the organic solvent is selected from the group consisting of alcohols, ethers, acylamides, sulfoxides, sulfones, nitriles and hydrocarbons.

16. (Currently Amended) A process ~~Process~~ according to Claim 15, wherein ~~characterised in that~~ the alcohol has ~~from~~ one to four carbon atoms in the ~~an~~ alkyl moiety and is preferably selected from the group consisting of methanol, ethanol, isopropanol and mixtures of at least two of these alcohols.

17. (Currently Amended) Perfluoroalkylphosphonates and bis(perfluoroal)kylphosphinates A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate selected from the group consisting of partially alkylated and peralkylated ammonium, phosphonium, sulfonium, pyridinium, pyridazinium, pyrimidinium, pyrazinium, imidazolium, pyrazolium, thiazolium, oxazolium and triazolium salts ~~salts~~.

18. (Currently Amended) Perfluoroalkylphosphonates and bis(perfluoroal)kylphosphinates A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim 16, having a cation selected from the group consisting of



where R¹ to R⁶ R⁵ are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N,
- an C₁ to C₈ alkyl radical (C₁ to C₈), which may be partially or completely substituted by further groups, preferably F, Cl, N(C_nF_(2n+1-x)H_x)₂, O(C_nF_(2n+1-x)H_x), SO₂(C_nF_(2n+1-x)H_x), C_nF_(2n+1-x)H_x, where 1 < n < 6 and 0 < x < 2n+1.

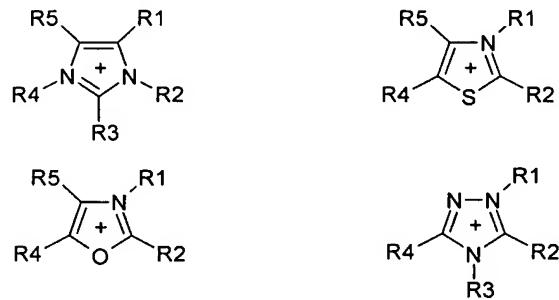
19. (Currently Amended) Use of the perfluoroalkylphosphonates and bis(perfluoroalkyl)phosphinates according to Claim 17 as An ionic liquid comprising a perfluoroalkylphosphonate or bis(perfluoroalkyl)phosphinate according to claim 17 liquids.

20. (Currently Amended) Use of the perfluoroalkylphosphonates and bis(perfluoroalkyl)phosphinates according to Claim 17 as A phase-transfer catalyst or surfactant comprising a perfluoroalkylphosphonate or bis(perfluoroalkyl)phosphinate according to claim 17 surfactants.

21. (New) A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim 18, where R¹ to R⁶ are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N, or
- an C₁ to C₈ alkyl radical, which may be partially or completely substituted by F, Cl, N(C_nF_(2n+1-x)H_x)₂, O(C_nF_(2n+1-x)H_x), SO₂(C_nF_(2n+1-x)H_x), C_nF_(2n+1-x)H_x, where 1 < n < 6 and 0 < x ≤ 2n+1.

22. (New) A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim 18, having a cation selected from



23. (New) A perfluoroalkylphosphonate or bis(perfluoroal)kylphosphinate according to Claim 22, where R¹ to R⁵ are identical or different, are optionally bonded directly to one another via a single or double bond and are each, individually or together, defined as follows:

- H,
- halogen, where the halogens are not bonded directly to N, or
- an C₁ to C₈ alkyl radical, which may be partially or completely substituted by F, Cl, N(C_nF_(2n+1-x)H_x)₂, O(C_nF_(2n+1-x)H_x), SO₂(C_nF_(2n+1-x)H_x), C_nF_(2n+1-x)H_x, where 1 < n < 6 and 0 < x ≤ 2n+1.

24. (New) A process according to Claim 4, in which 1 ≤ n ≤ 4.

25. (New) A process according to Claim 16, wherein the alcohol is methanol, ethanol, isopropanol or a mixture thereof.

26. (New) A process according to claim 1, wherein a perfluoroalkylphosphonate is obtained.

27. (New) A process according to claim 1, wherein a bis(perfluoroalkyl)phosphinate is obtained.

28. (New) A process according to claim 1, wherein a monohydroperfluoroalkane is obtained.